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AP/2123

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PRE-APPEAL BRIEF REQUEST FOR REVIEW	Docket Number (Optional) 09428/113002 (19.0343)	
OIPE MAR 21 2007 PATENT & TRADEMARK OFFICE	Application Number 10/604,062-Conf. #1061	Filed June 24, 2003
	First Named Inventor Simon Fleury et al.	
	Art Unit 2123	Examiner M. C. Jacob

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant /inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☒ attorney or agent of record.
Registration number 48,885

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34. ______

T. Chyau Liang
Signature

T. Chyau Liang, Ph.D.
Typed or printed name

(713) 228-8600
Telephone number

March 21, 2007
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

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PATENT TRADEMARK OFFICE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Simon G. Fleury et al.

Confirmation No.: 1061

Application No.: 10/604,062

Art Unit: 2123

Filed: June 24, 2003

Examiner: Jacob, Mary C.

For: SYSTEM AND METHOD FOR VISUALIZING DATA IN A THREE-DIMENSIONAL SCENE

PRE-APPEAL REQUEST FOR REVIEW

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the final Office Action dated November 21, 2006 and the Advisory Action dated February 13, 2007, Applicant respectfully requests a Pre-Appeal Brief Conference and submits the following arguments. A Notice of Appeal, pursuant to 37 C.F.R. §43.31 and the fees required are submitted herewith.

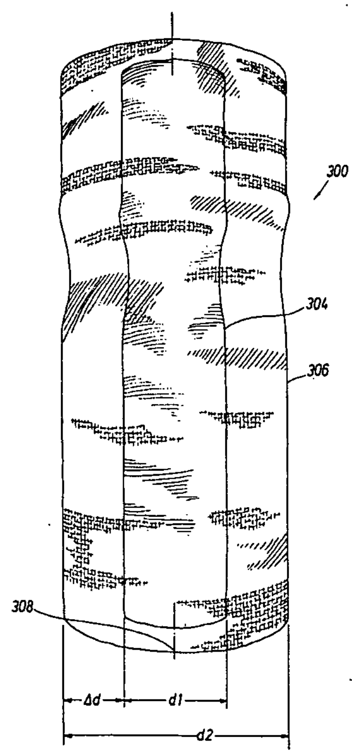
Disposition of Claims

Claims 1-36 are pending. All claims are rejected under 35 U.S.C. § 102(3) and/or § 103(a) based on Plumb et al. (US 6,078,867), alone or in combination with other references.

The Invention

The present invention is directed to methods for displaying a plurality of measurement data along a borehole trajectory. A method in accordance with one embodiment of the invention includes the steps of: displaying a borehole model representing the borehole trajectory; and displaying the plurality of measurement data as a plurality of layers overlaying the borehole model, wherein the plurality of measurement data are displayed at measurement depths corresponding to measurement depths of the borehole model.

FIG. 3



As shown in FIG. 3, two layers 304 and 306 are shown with different diameters, and each layer may represent a different property. For example, two or more layers having different diameters may be used to display property changes as a function of distance from the wellbore, such as drilling mud filtration.

I ndependent claim 1 recites a representative embodiment of the invention:

1. A method for displaying a plurality of measurement data along a borehole trajectory, comprising: displaying a borehole model representing the borehole trajectory; and displaying the plurality of measurement data as a plurality of layers overlaying the borehole model, wherein the plurality of measurement data are displayed at measurement depths corresponding to measurement depths of the borehole model. (emphasis added).

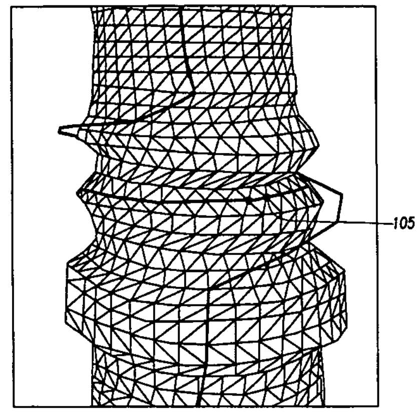
The other independent claim 19 includes the same limitations.

The Plumb reference

Plumb, which is assigned to the assignee of the present application, teaches a method of presenting a borehole using a mesh model. The mesh model (as shown in FIG. 4) is constructed by stacking a plurality of ellipse along the axial direction. In accordance with this method, each

section of the borehole at a particular depth is represented by an ellipse that corresponds to the diameter of the borehole at that depth. The series of the ellipses along the axis of the borehole are then stacked to form a tubular representation of wellbore with different diameters at different depths, as shown in FIG. 4. It is clear that the display in Plumb is a single layer model, with different diameters showing as bulges on the tube. The stacking of ellipses having two different diameters does not create two layers as asserted by the Examiner. (Final Office Action, p. 9-10)

FIG.4



In order to represent a variety of properties on the wellbore model, Plumb uses different color schemes to present different data on the single-layered borehole model. The use of color scheme is disclosed in Col. 4, line 45 – Col. 5, line 23, and Col. 6, lines 15-28, quoted below:

> "A color mapping function 115 maps colors to every node point of the quadrangle mesh. The coloring scheme is assigned according to lithology and ellipticity of the borehole. Lithology is determined by using a user defined gamma ray cutoff value provided by the set parameters module 20 and the input gamma ray tool data. High gamma ray values indicate a particular lithology, typically shale. For purposes of geomechanic interpretation, shale is a rock where the continuous load-bearing solid phase is made up of clay minerals. A low gamma ray value (e.g, below the gamma ray cutoff value) is typically sandstone where the continuous load-bearing solid phase is made up of quartz grains. High gamma ray values are associated with a borehole matrix supported by rock and are normally represented in a first color (typically blue), while low gamma ray values are associated with a grain supported borehole matrix and represented by a second color (typically red). The ellipticity of the borehole is emphasized by utilizing saturated colors where the surface is close to the long diameter of the ellipse and by gradually less saturated colors away from these locations. A gray colored surface indicates closeness to the shorter diameter of the ellipse. While the preferred

embodiments of the invention includes the colors described above as illustrating an lithology and ellipticity, it should be realized that any other colors are of course interchangeable with those discussed above for purposes of the present invention."

"The color mapping function 115 also determines the assigned colors for borehole vertices 105 based on ellipticity. This is accomplished by calculating for each ellipse 100, the distance from every vertex 105 within the ellipse to the center of the ellipse. The maximum distance is assigned a first color, for example, saturated (bright) red or saturated blue, depending on the gamma ray value and ellipticity coloring scheme. The minimum distance is assigned a second color (light red or light blue). Thus, the orientation of the long-axis is easily recognized both from the first colored part of the borehole, while the orientation of the short-axis can be seen from the second colored part of the borehole. The vertices (node points) 105 between these values are assigned colors between the two extremes using a linear interpolation technique. Thus, colors would gradually change from the first to the second color as you move from the long to the short axis. The colors of the surfaces between the node points are interpolated from the colors of the node points in a similar fashion."

"Referring now to FIG. 7, there is a flow diagram more fully describing the process for color mapping the vertices of the borehole quadrangle mesh according to lithology and ellipticity. Initially, the vertices are colored according to the gamma ray values for the borehole at step 244. The maximum and minimum distances between each node point and the center point of an ellipse are next calculated at step 245. The maximum and minimum node points are assigned the designated color intensity for those locations at step 250. The node points between the maximum and minimum values are assigned at step 255 colors between the two color extremes utilizing linear interpolation. The surfaces between

node points are assigned there color by interpolating from the colors of each of the node points at step 260."

These sections of the Plumb specification teach how a color scheme can be defined according to the distance to the center of the ellipse. However, Examiner mischaracterizes Plumb's teaching and asserts (Final Office Action, p. 9-10) that the forgoing text teaches the display of a plurality of data on a plurality of layers.

Because Plumb does not teach or suggest every limitation of the independent claims 1 and 19, Plumb cannot anticipate these claims. Dependent claims should also be patentable for at least the same reasons.

With regard to 35 U.S.C. § 103(a) rejections, other references cited by the Examiner also fail to teach or suggest displaying a plurality of data on a plurality of layers. Therefore, Plumb in combination with other cited references cannot render the pending claims obvious.

Accordingly, withdrawal of the 35 U.S.C. § 102(b) and § 103(a) rejections are respectfully requested.

Applicant believes no additional fee is due. Please apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 09428/113002).

Dated: March 21, 2007

Respectfully submitted,

By [signature]

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